IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant	:	Sriram Haridas	
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Commissioner for Patents
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APPEAL BRIEF

This brief is in furtherance of the Notice of Appeal, filed in this case on 10/16/2006.

This brief contains these items under the following headings, in the order and beginning on the pages set forth below:

The final page of this brief bears the attorney's signature.

I. Real Party in Interest

The real party in interest in this appeal is Cisco Technology, Inc.

II. Related Appeals and Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

The status of claims in this application is as follows:

A. Total Number of Claims in Application

The application includes 50 claims.

B. Status of All the Claims

1. Claims cancelled: 1-25
2. Claims withdrawn from consideration but not cancelled: NONE
3. Claims pending: 26-50
4. Claims allowed: NONE
5. Claims rejected: 26-50

C. Claims on Appeal

The claims on appeal are 26-50.

IV. Status of Amendments

No amendments after final rejection were proffered by applicant.

V. Summary of the Argument

Rejection of Claim 26 Under 35 U.S.C. § 103

Applicant respectfully submits that the Examiner has misconstrued what is disclosed by Lee (US 6,959,072) and by Isaka (US 6,654,455). Lee and Isaka, when fairly read by one of ordinary skill in the art at the time at the time of the invention, do not disclose the element of adding a DSP mask field to a voice packet or the element of multicasting voice data from the voice packet on a plurality of ports as selected by the DSP mask field. Further, there is no motivation to combine Lee and Isaka because it is unclear what the combination of multicasting with a voice messaging system would accomplish. Finally, there is no reasonable expectation of success in the combination of Lee and Isaka proposed by the Examiner because the element disclosed by Isaka to be added does not provide functionality required by the connected element disclosed by Lee. Therefore the Examiner has not established a *prima facie* case of obviousness.

Claims 28, 30, 31, 33, 35, 36, 38, 40, 41, 43, 45, 46, 48, and 50 are grouped with claim 26.

Rejection of Claim 27 Under 35 U.S.C. § 103

Applicant respectfully submits that the Examiner has misconstrued what is disclosed by Lee (US 6,959,072), the primary reference relied on to reject claim 27 as obvious. Lee, when fairly read by one of ordinary skill in the art at the time at the time of the invention, does not disclose the claimed element of "wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports" as asserted by the Examiner. Therefore the Examiner has not established a *prima facie* case of obviousness.

Claims 32, 37, 42 and 47 are grouped with claim 27.

Rejection of Claim 29 Under 35 U.S.C. § 103

Applicant respectfully submits that the Examiner has misconstrued what is disclosed by Lee (US 6,959,072), the primary reference relied on to reject claim 29 as obvious. Lee, when fairly read by one of ordinary skill in the art at the time at the time of the invention, does not disclose the claimed element of "wherein multicasting the voice data is without duplicating packets" as asserted by the Examiner. Lee discloses neither multicasting nor a method that avoids the need to duplicate packets. Therefore the Examiner has not established a *prima facie* case of obviousness.

Claims 34, 39, 44 and 49 are grouped with claim 29.

VI. Summary of Claimed Subject Matter

The claimed subject matter provides a method and system for a voice multicast hardware accelerator in which a network device or system includes a host system coupled to a memory to store data and a line card having a plurality of ports to interface with a plurality of user devices. The host system is to receive a network packet including voice data, to store the voice data in the memory, and to send a voice packet related to the voice data to the line card without duplication of the voice packet. The voice packet includes a DSP mask field to control multicasting of the voice data. A plurality of bits in the DSP mask field select ports on the line card on which the voice packet is to be multicast without the need to duplicate the voice packet for each port that is to multicast the voice packet.

To enable the Board to more quickly determine where the claimed subject matter is described in the specification, each of the independent claims involved in the appeal and each of the dependent claims argued separately are presented with references to the specification in square brackets and to the drawings in parenthesis:

26. A method of performing voice multicasting with a router (figs. 2 & 3, 204) [0022], the method comprising:

receiving a network packet (fig. 3, 308) [0024] that includes voice data; (fig. 5A, 510) [0032]

storing the voice data (fig. 3, 316) [0025] in a memory (fig. 3, 314) [0025]; (fig. 5A, 520) [0033]

generating a voice packet (fig. 3, 312) [0025] that includes a digital signal processing (DSP) mask field (fig. 4, 406) [0025]; (fig. 5A, 530) [0034]

sending the voice packet to a line card (fig. 3, 320) [0026] having a plurality of ports (fig. 3, port 1 to port n) [0026]; (fig. 5A, 530) [0034]

retrieving the voice data from the memory; (fig. 5A, 540) [0035] and

multicasting the voice data on the plurality of ports as selected by the DSP mask field. (fig. 5A, 540) [0035] [0027]

27. The method of claim 26, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports [0030] [0040].

29. The method of claim 26, wherein multicasting the voice data is without duplicating packets [0044].

31. A digital processing system (figs. 2 & 3, 204) [0022] comprising:

a host system (fig. 3, 308) [0024] to receive a network packet (fig. 3, 308) [0024] that includes voice data, store the voice data (fig. 3, 316) [0025] in a memory (fig. 3, 314) [0025], and generate a voice packet (fig. 3, 312) [0025] that includes a digital signal processing (DSP) mask field (fig. 4, 406) [0025]; and

a line card (fig. 3, 320) [0026] coupled to the host system, the line card having a plurality of ports (fig. 3, port 1 to port n) [0026], the line card to receive the voice packet, retrieve the voice data from the memory, and multicast the voice data on the plurality of ports as selected by the DSP mask field [0027].

32. The digital processing system of claim 31, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports [0030].

34. The digital processing system of claim 31, wherein multicasting the voice data is without duplicating packets [0044].

36. An apparatus (figs. 2 & 3, 204) [0022] comprising:

means for receiving (fig. 3, 308) [0024] a network packet (fig. 3, 308) [0024] that includes voice data;

means for storing (fig. 3, 314) [0025] the voice data (fig. 3, 316) [0025];

means for generating a voice packet (fig. 3, 312) [0025] that includes a digital signal processing (DSP) mask field (fig. 4, 406) [0025];

means for receiving the voice packet (fig. 3, 320) [0026];

means for retrieving the voice data (fig. 3, 206) [0027] from the means for storing the voice data; and

means for multicasting the voice data (fig. 3, 206) [0027] on a plurality of ports (fig. 3, port 1 to port n) [0026] as selected by the DSP mask field [0027].

37. The apparatus of claim 36, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports [0030].

39. The apparatus of claim 36, wherein multicasting the voice data is without duplicating packets [0044].

41. A network device (figs. 2 & 3, 204) [0022] comprising:

a host system including a host central processing unit (CPU) (fig. 3, 308) [0024] and an operating the system (fig. 3, 310) [0024], the host system to receive a network packet (fig. 3, 308) [0024] that includes voice data;

the CPU to store the voice data (fig. 3, 316) [0025] in a memory (fig. 3, 314) [0025] and generate a voice packet (fig. 3, 312) [0025] that includes a digital signal processing (DSP) mask field (fig. 4, 406) [0025]; and

a line card (fig. 3, 320) [0026] coupled to the host system, the line card having a plurality of ports (fig. 3, port 1 to port n) [0026] to interface to user devices (fig. 2, 210-1 to 210-N), the line card to receive the voice packet from the host system, retrieve the voice data from the memory, and to multicast the voice data on the plurality of ports as selected by the DSP mask field [0027].

42. The network device of claim 41, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports [0030].

44. The network device of claim 41, wherein the line card multicasts the voice data without duplicating packets [0044].

46. A medium storing instructions, the instructions to be processed by a processing unit to perform an operation comprising:

receiving a network packet (fig. 3, 308) [0024] that includes voice data; (fig. 5A, 510) [0032]

storing the voice data (fig. 3, 316) [0025] in a memory (fig. 3, 314) [0025]; (fig. 5A, 520) [0033]

generating a voice packet (fig. 3, 312) [0025] that includes a digital signal processing (DSP) mask field (fig. 4, 406) [0025]; (fig. 5A, 530) [0034]

sending the voice packet to a line card (fig. 3, 320) [0026] having a plurality of ports (fig. 3, port 1 to port n) [0026]; (fig. 5A, 530) [0034]

retrieving the voice data from the memory; (fig. 5A, 540) [0035] and

multicasting the voice data on the plurality of ports as selected by the DSP mask field. (fig. 5A, 540) [0035] [0027]

47. The medium of claim 46, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports [0030] [0040].

49. The medium of claim 46, wherein multicasting the voice data is without duplicating packets [0044].

VII. Grounds of Rejection to be Reviewed on Appeal

Claims 26-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee (US 6,959,072) in view of Isaka (US 6,654,455).

VIII. Argument

Rejections under 35 U.S.C. § 103

The Examiner rejects claims 26-50 under 35 U.S.C. § 103(a) as being unpatentable over Lee (US 6,959,072) in view of Isaka (US 6,654,455).

Claims 26, 28, 30, 31, 33, 35, 36, 38, 40, 41, 43, 45, 46, 48, and 50

Independent claim 26 claims a "method of performing voice multicasting with a router." The claimed method includes the elements of "generating a voice packet that includes a digital signal processing (DSP) mask field" and multicasting voice data from the voice packet on a plurality of ports as selected by the DSP mask field.

The Examiner asserts that Lee discloses generating a voice packet that includes a digital signal processing (DSP) mask field, citing column 3, lines 30-36.

Applicant respectfully disagrees. The cited portion of Lee discloses an internet gateway having a digital signal processor (DSP) which interfaces with the internet. This does not disclose generating a voice packet including a digital signal processing (DSP) mask field as claimed. The mere presence of a DSP discloses nothing about mechanisms for using the DSP such as generating the claimed DSP mask field.

In rebuttal, the Examiner argues that at column 3, lines 30-36, Lee discloses that the present invention [of Lee] records and reproduces (i.e. generates) outgoing voice messages using an lnternet gateway having a digital signal processing (DSP) (i.e. that is a special-purpose CPU used for digital signal processing applications).

Applicant respectfully submits that the Examiner has misconstrued the disclosure of Lee. Lee discloses a voice mail service (VMS) that records and reproduces voice messages using an

internet gateway. Col. 3, lines 30-36. The recording and playback of messages is entirely unlike the transmission of messages over a network, and particularly unlike multicasting messages. As the only use of the messages recorded by the VMS disclosed by Lee is to play the messages to caller, there is no motivation to add a DSP mask field. Since the VMS messages disclosed by Lee are stored in a memory to be retrieved for delivery in response to a call request, the control information related to the messages is stored in a separate call processing table. Col. 4, lines 46-55. This structure is dictated because the VMS needs to retrieve the message in response to a call and the control information is needed prior to retrieving the stored message. In great contrast, the claimed subject matter provides a method for selecting ports on a line card to which voice data should be multicast based on a received voice packet. The DSP mask field to select the ports can be included in the voice packet because the line card receives the voice packet and then selects ports for delivery of the voice data. Thus, Lee does not disclose adding a DSP mask field to a voice packet.

The Examiner admits that Lee fails to teach explicitly multicasting the voice data on the plurality of ports as selected by the DSP mask field. The Examiner asserts however, that Isaka discloses multicasting using a multicast router, citing figure 5, item 70 and column 2, lines 1-10.

Applicant respectfully disagrees. The cited portion of Isaka discloses a multicast router 70 that may be substituted for a conference trunk for managing a multicast group. In great contrast to the claimed subject matter, Isaka discloses a method where a multicast IP address is registered for a conference connection. The network recognizes that particular telephones belong to the multicast group designated by the multicast IP address by reference to IGMP report packets. Thus the network forwards voice packets to the particular telephones that belong to the multicast group by recognizing the multicast IP address assigned to a packet as one previously memorized

to designate the particular telephones. Col. 8, lines 28-55. This is entirely unlike the claimed subject matter that provides a DSP mask field in the voice packet that selects the ports on a line card on which the voice data that is stored in the packet should be multicast. Lee and Isaka fail to disclose all claim limitations because they do not disclose generating a voice packet that includes a digital signal processing (DSP) mask field and they do not disclose multicasting the voice data on a plurality of ports as selected by the DSP mask field as claimed..

In rebuttal, the Examiner reiterates the portion of Isaka relied on and asserts that Isaka clearly discloses the claimed subject matter without further support for the assertion.

Applicant respectfully submits that that the Examiner has failed to provide more than the bare observation that Isaka discloses multicasting using a multicast router. Such a disclosure falls far short of disclosing the claimed element of "multicasting the voice data on the plurality of ports as selected by the DSP mask field," particularly in view of the detailed reasons provided refuting the Examiner's interpretation of Isaka.

Applicant respectfully submits that there is no motivation to combine Lee and Isaka. Lee discloses an apparatus and method for recording and reproducing voice messages that is delivered to a calling subscriber (Abstract). Isaka discloses an IP telephone conference system (Abstract). Lee delivers a recorded message to a caller and therefore lacks the requisite plurality of connected telephones to use the techniques of a telephone conferencing system. Therefore there is no motivation to apply techniques for telephone conferencing disclosed by Isaka to the techniques for delivery of a recorded message to a calling subscriber disclosed by Lee.

Lee is a "pull" system that determines which DSP port to use by reference to a DSP table and which message to be announced based on the event corresponding to the seizure of the office line by reference to a call processing table (col. 6, lines 50-67). There would be no reasonable

expectation of success in the combination of Lee and Isaka because Lee does not provide for routing of a voice packet by an IP address and thus Lee does not disclose a place where the multicast IP address of Isaka could be used to combine the two disclosures.

In rebuttal the Examiner argues that Lee discloses generating a voice packet that includes a digital signal processing (DSP) mask field (column 3, lines 30-36) and that Isaka discloses multicasting using multicast router (figure 5, item 70; column 2, lines 1-10). The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee by substituting interface 30 with the multicast router of Isaka to provide multicasting the voice data on the plurality of ports as selected by the DSP mask field. The Examiner asserts that one would be motivated to do so to allow the network with multicasting ability (abstract).

Applicant respectfully submits that the Examiner fails to explain how the multicast router disclosed by Isaka (element 70 in Figure 5) could be substituted for the interface disclosed by Lee (element 30 in Figure 2). The interface disclosed by Lee connects the line interfaces of subscriber terminals to an internet gateway. The multicast router disclosed by Isaka does not provide an equivalent connection; it only provides interconnection of two networks. The device disclosed by Lee relies on the interaction of the call processor (element 110, figure 2) and the DSP manager (element 120, figure 2) to provide a communication path to a subscriber terminal and provide voice data compression and decompression for the VMS functions provided to that terminal. Col. 4, lines 31-45. The multicast router disclosed by Isaka would not provide a communication path to a subscriber terminal as required by the call processor disclosed by Lee.

Further, the Examiner has not provided any explanation of why one would want to combine multicasting with a voice messaging system or what such a combination would accomplish.

The combination of Lee and Isaka fail to disclose each and every element of the claimed subject matter. There is no reasonable expectation of success in the combination of Lee and Isaka. There is no credible motivation to combine Lee and Isaka. Therefore the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

Claims 27, 32, 37, 42 and 47

Claim 27 depends from claim 26 and adds the further element of "wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports." The Examiner asserts that Lee discloses "wherein the DSP mask field comprise a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports," citing column 2, lines 44-59. The Examiner argues that Lee discloses a plurality of ports and determining which DSP port is available, and outputting the port information and the number of the corresponding voice message with reference to Figure 3A.

Applicant respectfully disagrees. Figure 3A shows a DSP table including DSP identity, port corresponding to the DSP, and state of the port as enable, busy, or fault (col. 5, lines 21-28). Nothing in Lee discloses a bit field map in a voice packet or a bit map field having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports as claimed.

The Examiner has responded to applicant's argument in the Office Action mailed 06/15/2006 by arguing that Lee discloses a plurality of DSPs having a different number of ports that can be implemented, citing column 4, lines 57-62.

Applicant argues in rebuttal that the disclosure of an implementation of a plurality of DSPs having a different number of ports discloses nothing with regard to the claimed element of

"wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports."

Claim 27 depends from claim 26. Claim 27 adds a further element to the DSP mask field that is included in a voice packet according to claim 26. The claimed subject matter generates a voice packet that includes a DSP mask field with port selection bits. The voice packet is sent to a line card where the voice data is multicast to ports on the line card selected by the selection bits in the voice packet.

Lee discloses a DSP table that is included in a call processor unit (col. 5, lines 19-21) which is entirely unlike a DSP mask field in a voice packet in the claimed subject matter. Further, Lee discloses the use of bits to configure the ports of a DSP (col. 5, lines 19-32) which is entirely unlike selecting ports on which to multicast a received voice packet based on the content of the received packet in the claimed subject matter. Therefore the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

Claims 29, 34, 39, 44 and 49

Claim 29 depends from claim 26 and adds the further element of "wherein multicasting the voice data is without duplicating packets." The Examiner asserts that Lee discloses "wherein multicasting the voice data is without duplicating packets," citing column 3, lines 51-53 and column 2, lines 10-14.

Applicant respectfully points out that Lee discloses transmitting a pre-recorded voice message to a subscriber telephone at column 3, lines 51-53. Nothing in this cited disclosure discloses anything with regard to multicasting. At column 2, lines 10-14, Lee discloses a voice recording apparatus that includes an internet gateway for recording the subscriber voice message. Lee further discloses that the internet gateway includes a digital signal processor (DSP) that

supports a plurality of ports. Again nothing in the cited disclosure discloses anything with regard to multicasting.

It appears that the Examiner is tacitly assuming that the disclosure of support for a plurality of ports somehow infers multicasting but the Examiner provides no support for such a proposition. Even if the disclosure of a plurality of ports infers multicasting, there is no disclosure of how a voice message could be multicast to the plurality of ports without duplicating packets. Lee fails to teach the additional element added by claim 29 because Lee does not teach multicasting voice data without duplicating packets. Therefore the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

XI. Conclusion

For the foregoing reasons, applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness for rejecting any of applicant's claims under 35 U.S.C. § 103, and applicant asks that the decision of the Examiner rejecting applicant's claims 26-50 be reversed.

XII. Appendix of Claims

The text of the claims involved in the appeal is:

26. A method of performing voice multicasting with a router, the method comprising:
receiving a network packet that includes voice data;
storing the voice data in a memory;
generating a voice packet that includes a digital signal processing (DSP) mask field;
sending the voice packet to a line card having a plurality of ports;
retrieving the voice data from the memory; and
multicasting the voice data on the plurality of ports as selected by the DSP mask field.

27. The method of claim 26, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports.

28. The method of claim 26, wherein the voice packet further includes descriptor fields for retrieving the voice data from the memory for multicasting.

29. The method of claim 26, wherein multicasting the voice data is without duplicating packets.

30. The method of claim 26, wherein the network packet is an Internet Protocol (IP) packet.

31. A digital processing system comprising:

a host system to receive a network packet that includes voice data, store the voice data in a memory, and generate a voice packet that includes a digital signal processing (DSP) mask field; and

a line card coupled to the host system, the line card having a plurality of ports, the line card to receive the voice packet, retrieve the voice data from the memory, and multicast the voice data on the plurality of ports as selected by the DSP mask field.

32. The digital processing system of claim 31, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports.

33. The digital processing system of claim 31, wherein the voice packet further includes descriptor fields for retrieving the voice data from the memory for multicasting.

34. The digital processing system of claim 31, wherein multicasting the voice data is without duplicating packets.

35. The digital processing system of claim 31, wherein the network packet is an Internet Protocol (IP) packet.

36. An apparatus comprising:

means for receiving a network packet that includes voice data;

means for storing the voice data;

means for generating a voice packet that includes a digital signal processing (DSP) mask field;

means for receiving the voice packet;

means for retrieving the voice data from the means for storing the voice data; and

means for multicasting the voice data on a plurality of ports as selected by the DSP mask field.

37. The apparatus of claim 36, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports.

38. The apparatus of claim 36, wherein the voice packet further includes descriptor fields for retrieving the voice data from the means for storing the voice data.

39. The apparatus of claim 36, wherein multicasting the voice data is without duplicating packets.

40. The apparatus of claim 36, wherein the network packet is an Internet Protocol (IP) packet.

41. A network device comprising:

a host system including a host central processing unit (CPU) and an operating the system, the host system to receive a network packet that includes voice data;

the CPU to store the voice data in a memory and generate a voice packet that includes a digital signal processing (DSP) mask field; and

a line card coupled to the host system, the line card having a plurality of ports to interface to user devices, the line card to receive the voice packet from the host system, retrieve the voice data from the memory, and to multicast the voice data on the plurality of ports as selected by the DSP mask field.

42. The network device of claim 41, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports.

43. The network device of claim 41, wherein the voice packet further includes descriptor fields for retrieving the voice data from the memory for multicasting.

44. The network device of claim 41, wherein the line card multicasts the voice data without duplicating packets.

45. The network device of claim 41, wherein the network packet is an Internet Protocol (IP) packet.

46. A medium storing instructions, the instructions to be processed by a processing unit to perform an operation comprising:
receiving a network packet that includes voice data;
storing the voice data in a memory;
generating a voice packet that includes a digital signal processing (DSP) mask field;
sending the voice packet to a line card having a plurality of ports;
retrieving the voice data from the memory; and
multicasting the voice data on the plurality of ports as selected by the DSP mask field.

47. The medium of claim 46, wherein the DSP mask field comprises a bit field map having a plurality of bits in which each one of the plurality of bits selects one of the corresponding plurality of ports.

48. The medium of claim 46, wherein the voice packet further includes descriptor fields for retrieving the voice data from the memory for multicasting.

49. The medium of claim 46, wherein multicasting the voice data is without duplicating packets.

50. The medium of claim 46, wherein the network packet is an Internet Protocol (IP) packet.

XIII. Appendix of Evidence

No evidence is included with this brief.

XIII. Appendix of Related Decisions

There are no related proceedings.

Respectfully submitted,

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